# Article information:

Solvent Reorganization and Additives Synergistically Enable High-Performance Na-Ion Batteries | ACS Energy Letters
<https://pubs.acs.org/doi/full/10.1021/acsenergylett.2c02353>

# Article summary:

1. Phosphate-based electrolytes have advantages for Na-ion batteries, but struggle to form a stable SEI film on carbonaceous anodes at conventional salt concentrations.

2. High-concentration and local-high-concentration electrolytes have been developed to stabilize phosphate-based electrolytes towards carbonaceous electrodes, but face limitations such as high cost and low conductivity.

3. Manipulating the solvent system rather than focusing on salts can lead to high-performance and dilute electrolytes for Na-ion batteries, with charge-asymmetric PhCF3 playing a key role in tuning intermolecular interactions in mixed solvent systems.

# Article rating:

Appears moderately imbalanced: The article provides some useful information, but is missing several important points or pieces of evidence that would be required to present the discussed topics in a balanced and reliable way. You are encouraged to seek a more balanced perspective on the presented issues by exploring the provided research topics and looking at different information sources.

# Article analysis:

作为一篇科学论文，该文章并没有明显的偏见或宣传内容。然而，它可能存在一些片面报道和缺失的考虑点。

首先，文章强调了磷酸盐电解质的优点，但没有提到其缺点。例如，磷酸盐电解质通常具有较低的离子导电率和较高的粘度，这可能会影响电池性能。

其次，在讨论高浓度电解质时，文章提到了HCE和LHCE的局限性，但没有探讨其他类型的高浓度电解质。此外，文章未涉及如何平衡高浓度电解质对电池性能和成本之间的影响。

最后，在介绍新型溶剂系统时，文章未探讨其他可能存在的风险或不利因素。例如，PhCF3作为“溶剂协调员”的使用是否会对环境造成潜在危害？此外，在实际应用中使用这种新型溶剂系统是否存在技术难题或经济问题？

总体而言，该文章提供了一个有趣且有前途的方法来设计高性能钠离子电池电解质。然而，在进一步开发和应用这种新型溶剂系统时需要更全面地考虑各种因素，并进行充分评估其可行性和可持续性。

# Topics for further research:

* Limitations of phosphate electrolytes
* Other types of high concentration electrolytes
* Balancing electrolyte concentration with battery performance and cost
* Potential risks and drawbacks of new solvent systems
* Technical and economic challenges of implementing new solvent systems
* Comprehensive evaluation of feasibility and sustainability of new electrolyte designs

# Report location:

<https://www.fullpicture.app/item/58a2986c4c1b9d5c7b696c49cc382b35>